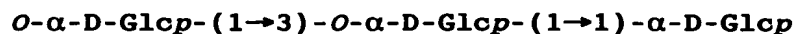


CLAIMS

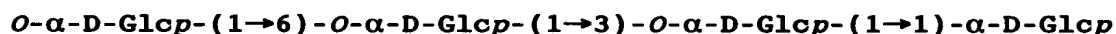
1. An 3- α -glycosyl α,α -trehalose which has an α -glucosyl
 α,α -trehalose structure, represented by the chemical formula 1,
5 intermolecularly.

Chemical formula 1:



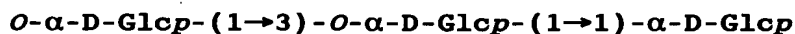
2. The 3- α -glycosyl α,α -trehalose of claim 1, wherein said
3- α -glycosyl α,α -trehalose is 3-isomaltosyl α,α -trehalose represented
10 by the chemical formula 2.

Chemical formula 2:



3. The 3- α -glycosyl α,α -trehalose of claim 1, wherein said
3- α -glycosyl α,α -trehalose is 3- α -glucosyl α,α -trehalose represented
15 by the chemical formula 3.

Chemical formula 3:



4. A method for forming 3- α -glycosyl α,α -trehalose of any
one of claims 1 to 3, which comprises a step of allowing
20 α -isomaltosyl-transferring enzyme to act on an aqueous solution
comprising α,α -trehalose and a saccharide having a glucose
polymerization degree of 3 or higher and bearing both the α -1,6 glucosidic
linkage as a linkage at the non-reducing end and the α -1,4 glucosidic
linkage other than the linkage at the non-reducing end.

25 5. The method of claim 4, wherein said saccharide is prepared
by allowing α -isomaltosylglucosaccharide-forming enzyme to act on

partial starch hydrolyzates.

6. The method of claim 4 or 5, which further comprises a step of allowing glucoamylase to act on the reaction mixture.

7. A method of forming α -glycosyl α,α -trehalose, which
5 comprises the step of allowing a saccharide-transferring enzyme to act on an aqueous solution comprising 3- α -isomaltosyl α,α -trehalose represented by the chemical formula 2 and/or 3- α -glucosyl α,α -trehalose represented by the chemical formula 3 and optional other saccharides to form said α -glycosyl α,α -trehalose of claim 1.

10 8. A process for producing 3- α -glycosyl α,α -trehalose of claim 2, which comprises the steps of:

allowing α -isomaltosyl-transferring enzyme to act on an aqueous solution comprising α,α -trehalose and a saccharide having a glucose polymerization degree of 3 or higher and bearing both the α -1,6
15 glucosidic linkage as a linkage at the non-reducing end and the α -1,4 glucosidic linkage other than the linkage at the non-reducing end to form 3- α -isomaltosyl α,α -trehalose represented by the chemical formula 2; and

collecting the resulting 3- α -isomaltosyl α,α -trehalose.

20 9. The process of claim 8, wherein said saccharide is prepared by allowing α -isomaltosylglucosaccharide-forming enzyme to act on starchy substances.

10. A process for producing 3- α -glycosyl α,α -trehalose of claim 3, which comprises the steps of:

25 allowing α -isomaltosyl-transferring enzyme to act on an aqueous solution comprising α,α -trehalose and a saccharide having a

glucose polymerization degree of 3 or higher and bearing both the α -1,6 glucosidic linkage as a linkage at the non-reducing end and the α -1,4 glucosidic linkage other than the linkage at the non-reducing end to form 3- α -isomaltosyl α,α -trehalose represented by the chemical formula

5 2;

successively allowing glucoamylase to act on the resulting 3- α -isomaltosyl α,α -trehalose to form 3- α -glucosyl α,α -trehalose represented by the chemical formula 3; and

collecting the resulting 3- α -glucosyl α,α -trehalose.

10 11. A process for producing α -glycosyl α,α -trehalose, which comprises the step of:

allowing a saccharide-transferring enzyme to act on an aqueous solution comprising 3- α -isomaltosyl α,α -trehalose represented by the chemical formula 2 and/or 3- α -glucosyl α,α -trehalose represented
15 by the chemical formula 3 and optional other saccharides to form α -glycosyl α,α -trehalose of claim 1; and

collecting the resulting α -glycosyl α,α -trehalose.

12. The process for producing α -glycosyl α,α -trehalose of any one of claims 8 to 11, wherein said α -glycosyl α,α -trehalose is collected
20 by a column chromatography using a column packed with a salt-type strongly acidic cation exchange resin.

13. A composition which comprises α -glycosyl α,α -trehalose of any one of claims 1 to 3.

14. The composition of claim 13, where one or more ingredients
25 selected from the group consisting of other non-reducing saccharides, reducing saccharides, sugar alcohols, and minerals are incorporated

into said α -glycosyl α,α -trehalose of any one of claims 1 to 3.

15. The composition of claim 13 or 14, which is in the form of a product for oral use, food and beverage, cosmetic, or pharmaceutical.